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ABSTRACT

This document compiles three Forum 40 addresses. Dr. Hakanson, a community college president, believes that unless we can successfully introduce the human dimension into our technologically based and production oriented culture, we will continue to see increasing disaffection among larger and larger segments of the population. He postulates a "creative society" in which social units will be structured so that people can and will identify with them, and with each other. If schools are to take a leadership role in structuring such a society, they must expand many of the activities going on today under the banner of community services. Schools and community colleges will become distribution centers for social and health services. Carl Hough, a Boeing Company administrator, focuses his remarks on the technological forces which may influence change, including lasers, computers, and satellites. Miner H. Baker, a working economist, stresses human elements rather than technological forces. He sees a movement toward an older, more stable population, living in a social structure without racial or sex discrimination. He sees an end to environmental and energy problems, but a continued inflationary thrust in the econom y at a level well above the historic average. (NHM)

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COMMUNITY SERVICES, 2000 A.D.

FORUM 40

Chairman

Marvin Weiss
Associate Dean of Community Services
Clackamas Community College

Speakers

John Hakanson
President
Clackamas Community College

Carl Hough
Administrator, School Relations
The Boeing Company

Miner Baker
Vice President of Research
Seattle First National Bank

Presented at the Annual Convention of the American
Association of Community and Junior Colleges at Seattle, Washington

April 15, 1975

JC 750 553

COMMUNITY SERVICES IN 2000 A.D.
A Creative Society

by

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Clackamas Community College
Oregon City, Oregon

55th Annual AACJC Convention
Seattle, Washington

April, 1975

COMMUNITY SERVICES IN 2000 A.D.
A Creative Society

By John Hakanson

To speak of the shape of community services programs in 2000 A.D. is to indulge in prophecy. Whatever else they may do, I believe prophets ought to speak positively and with resolve, else who will believe? I will try to speak that way here.

In his book, So Human An Animal, microbiologist Rene Dubos says,

> "The whole world is accessible to me, but the unobstructed view from my 26th floor windows reveals only a confusion of concrete and steel bathed in a dirty light; smog is a euphemism for the mud that constantly befouls the sky and blots out its blueness. Night and day, the roar of the city provides an unstructured background for the shrieking world news endlessly transmitted by the radio.
>
> Everything I eat, drink, and use comes from far away, or at least from an unknown somewhere. It has been treated chemically, controlled electronically, and handled by countless anonymous devices before reaching me...My life depends on a technology that I do not really understand, and on social forces that are beyond my control. While I am aware of the dangers this dependence implies, I accept them as a matter

of expediency. I spend my days in the midst of noise, dirt, ugliness, and absurdity, in order to have easier access to well-equipped laboratories, libraries, museums, and to a few sophisticated colleagues whose material existence is as absurd as mine.

Our ancestors' lives were sustained by physical work and direct associations with human beings. We receive our livelihood in the form of anonymously computerized paper documents that we exchange for food, clothing, or gadgets. We have learned to enjoy stress instead of peace, excitement in lieu of rest, and to extract from the confusion of day-to-day life a small core of exhilarating experiences. I doubt that mankind can tolerate our absurd way of life much longer without losing what is best in humanness. Western man will either choose a new society or a new society will abolish him; this means in practice that we shall have to change our technological environment or it will change us."[1]

I hope you will forgive such a lengthy quotion. Dr. Dubos, it seems to me, presents the basic dilemma of Western Man so well in this passage that I couldn't leave any of it out. So Human An Animal was published in 1968. We can be confident that Dr. Dubos has not found much improvement in his immediate environment nor in the humanness of American culture since then.

I believe that unless we can successfully introduce the human dimension into our technologically based and production oriented culture, we will continue to see increasing disaffection among larger and larger segments of the population. Crime rates will continue to grow. Hunger, poverty, pollution and poor health will plague increasing numbers of people. We can each recite a litany of troubles which sorely perplex and abuse us all. There will be many similar titles in all the lists, and most of them come under the heading of mans' inhumanity to men. Christ observed that man does not live by bread alone, and we are still learning how subtle and profound that comment was.

We continue to perpetuate a culture where too many youth are taught little except conformity; where too many elders are relegated too soon to a wasteland where their time and talents are lost; where too many of the rest of us live in ambivalent discontent with little purpose in life beyond "payday and sundown", as we used to put it in my younger days in the logging industry, not understanding ourselves or our culture, and satisfied with neither.

But we cannot forever deny our own humanity. Change will occur and it can be a positive experience. Eric Hoffer has described the "creative society" as one...

> "in which most people feel that they are growing, that they are realizing capacities and mastering skills, and have neither the

time nor the inclination to do harm to their fellow men."

I agree with Hoffer when he goes on to say,

> "My guess is that the unit of a creative society will be not a county or a parish but a school district. The country will be divided into thousands of school districts, each responsible for the realization of the natural and human resources within a relatively small area.
>
> The unfolding of human capacities requires a social unit in which people of different pursuits, interests, skills and tastes know each other, commune daily with each other, emulate, antagonize and spur each other."[2]

There will be few strangers in this creative culture, and only a little loneliness. There does not need to be, and there will not be, either estranged youth, nor banished age, nor frustrated, esthetically and emotionally limited middle years.

People will live closer to their places of work, and in small communities, or more nearly self-contained neighborhoods or large communities. These social units will be structured so that people can and will identify with them and with each other. As Lyndon Johnson said when he went home to his ranch in Texas, "Back there, they care when you're sick, and they know when you die."

The social units into which our culture will be organized will be

structured quite differently in the matter of getting work done. Many more part-time jobs will exist, and a very much broader age spectrum of people will fill these jobs. Work will be a natural part of growing up, because youngsters will work as part of their ordinary school life. Work will continue on in whatever degree is desirable and attainable until death or incapacity. People will be expected to participate and contribute in an appropriate manner as long as it is possible for them to do something. The tasks that need to be performed in order to live within the human dimension will be organized so that all participate, all are committed, all are responsible, and everybody has an important contribution to make, beginning early in life, and continuing on till the end of life or the loss of ability to contribute.

If schools are to take a leadership role in the structuring of the kind of society I am talking about, and I believe they can take such a role, one of the principal things we will see is that many of the activities going on today under the banner of community services will have been expanded and enlarged. We will also see that community services are being provided by many schools other than community colleges. We will probably find, too, that community colleges have taken on something of a coordinating role with elementary and scondary schools.

If we look at what will be called community services in 2000 A.D., we will see that schools and community colleges will have become distribution centers for social and health services. Larger units, such as

community colleges, will be the location for area or regional offices of such services as employment, welfare services, senior citizen agencies, vocational rehabilitation, childrens' services and mental health offices. These facilities will be grouped together in a single building, or located in complexes of smaller but closely related buildings. Clients will find representatives of all the social agencies in one place and will be able to go to a central referral office for quick, convenient help. Agency staffs will be able to coordinate their services and thus do a better job of meeting peoples' needs.

Community colleges will also increasingly become the sites for medical clinics and hospitals. Complexes of physicians, dentists, clinicians, practicing registered nurses, and other kinds of health services and personnel will be located on or near college campuses. The practice of preventive medicine will have become widespread, and great numbers of people will be involved in one or another program of education as we all learn more about staying healthy and keeping our communities healthy.

There is substantial, not to say overwhelming, evidence that truly immense quantities of energy and food are being wasted in our country daily. Many of our seers and wise men are warning us that our culture must turn to a conservationist ethic rather than a growth ethic. This will surely happen, by force of circumstances if not by choice, and how much better if it can be done by choice!

When western culture has adapted to some limits on food and energy consumption, there will be another pressure turning people inward towards smaller communities and neighborhoods. We may have to learn all over again how to entertain ourselves! Recreational and entertainment resources and facilities will be very much a part of the life of most people. Physical education activities and games will be a major element in the overall program of physical fitness and preventive medicine. Here again, colleges and schools can use their resources of talent and facilities.

Community college libraries will have become much larger in 2000 A.D. and will serve in ways beyond the traditional function of such libraries. They will be community service libraries of a special sort, with vast stores of computerized information accessible to all. I am speaking here not only of information in the sense of material contained in books, records, tapes, et cetera.

What I have reference to is the kind of information people need who are looking for help. Extensive and comprehensive directories of social, medical and community services will be open to all, either physically or by phone from a distance. Codified and computerized information will be available for people who want to find out who can and will teach them to bake bread or to dry fruit, or who will fix a leaking faucet, or prune the rose bushes, to list a few examples of another kind of directory we can expect to find. Volunteer services of many kinds will also be included.

People who wish to make their talents and skills available will have a channel through which they may do so.

Class schedules for all kinds of schools will be available, computerized, in these libraries. You will be able not only to find where and when classes on a given subject will be offered, you will also be able to indicate your interest in a particular course. Your interest will be combined with similar concerns of others, and you will shortly receive notice of a class which is being organized to meet your desires.

Community service libraries in the future will also make available to people everywhere all sorts of information about nutrition, food gathering and preservation, and the real energy consumption requirements of various activities and of various appliances and gadgets, as well as suggestions about how to reduce energy consumption.

There is almost literally no end of useful, pragmatic information which can be codified and made available through computers and terminals located in school and college libraries. Imaginative and innovate people will carry this far beyond anything we might think of here.

By 2000 A.D., the ancient goal of making facilities and resources available to people as they pursue lifelong learning will have been attained. In truth, we practice lifelong learning now, and always have, but the schools in 25 years will have become structured so as to provide extensive help to all who seek to learn. Schools and colleges will be open, available, and largely free to practically everybody. Formal learning will be more or less continuous, and open entry-open exit will characterize the entire process.

Large proportions of the population will be engaged in learning and recreational experiences across a broad spectrum of knowledge, art, drama, practical and applied pursuits, music, or whatever the people are interested in. Performing groups or individuals, amateur and professional, will proliferate. Symposiums and lectures on a wide array of matters will be conveniently available.

Mention has been made several times of the likelihood that other kinds of schools will also be involved in offering community services. If a new and creative society based on social units structured on the human scale is to be realized, what we now think of as "the community school movement" will surely have to flower and grow even beyond our best dreams.

In the future, schools will become truly the centers of their communities. Just as regional or area-wide social and medical service agencies will be sited on community college campuses, there are good reasons to imagine that local community and neighborhood services will be located in or near elementary and secondary schools. A melding of City Hall and the elementary school, of the County Courthouse and the community college, would seem to be a logical result of an expanded community services program. The existence of certain buildings and physical facilities will cause this to be a slow development, but it ought to happen. Schools and colleges would thus become part of the real world where real problems bedevil real people, and where real solutions are required.

The true learning society will have arrived, and our culture will need its services. The problems facing society will have become so pervasive and so pressing that mass, lifelong, continuous education will be necessary if we are to meet and solve problems in a rational way. Energy, population control, food, transportation, health; each of us can make his own list. Lest we follow one demagogue or another, we will have to raise the level of knowledge of the general population substantially. Schools and community colleges are the proper vehicles for this task.

In the creative society, schools and colleges will not be merely places where people learn. They will become centers whose resources can be used in attacking community problems. Information and expertise can be brought to bear on situations facing the local people. Community services will have made the transition from doing things for people, to doing things with people. Schools and colleges will be used by the common people. They will no longer be the almost exclusive preserve of the pedant and the academic, and all concerned will be the better for that.

Earlier I quoted Eric Hoffer's remarks about the basic unit of a creative society being the school district. Hoffer's comment just prior to that quotation is also pertinent. He says, "It remains to be seen whether it is possible to have a society free from want in which most people feel that they are growing; that they are realizing capacities and mastering skills, and have neither the time nor the inclination to do harm to their fellow man."[2]

There exist today at least the primitive beginnings of most of the developments I have discussed here.

I believe it perfectly feasible that schools and community colleges, through greatly expanded programs of community services, can provide the framework and the substance for a creative society such as Hoffer describes. I would suggest that a creative society will be one in which human values are predominant; where people will have successfully introduced the human dimension into a technological culture. Dubos and others have observed that there are biological and psychological imperatives involved here. We will change our social organization to take into account the community of man, or our culture will be replaced.

We predict the future in the belief that we can influence it. Community service programs can be the vehicle through which humanness can be restored to our environment.

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1. pp. 216-17
2. First Things, Last Things, p. 40

April, 1975

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COMMUNITY SERVICES, 2000 AD

Forum 40 for the National Council on Community Services for Junior and Community Colleges

Carl H. Hough
Administrator, School Relations
The Boeing Company

Presented at the Annual Convention of the American Association of Community and Junior Colleges at Seattle, Washington

April 15, 1975

When I was first contacted about participating in this forum on "Community Services, 2000 AD" I was reminded of some comments on forecasting made by Dean C. Jackson Grayson of Southern Methodist University. In a similar situation, the Dean had been told: 1.) The first rule is never forecast, 2.) If you must forecast, forecast frequently, and 3.) Never forecast about the future. Needless to say, I did not follow this good advice.

Mention of the year 2000 AD still conjures up in my mind visions of Buck Rogers complete with personal space craft and hand disintegrator. When I consider, however, that 2000 is only 25 years away, my initial picture becomes a little hazy. An even more sobering note is to realize that 25 years into the past only brings one to the year 1950 - practically yesterday.

For my part of this forum I will try to limit my remarks to the technological sources which may influence change. In Basil and Cook's book The Management of Change the authors define technological sources of change in three categories. A primary change involves innovative breakthroughs, and tertiary changes involve refinement and variation of existing principles or hardware. As an example, the invention of the airplane would be primary, the development of jet engines secondary, and minor variations of flight hardware and services would be tertiary. A look into the past 25 years reveals most of the primary changes occuring in the fields of chemistry, biology and medicine - DNA structure, terramycin, polio and measles vaccine, and heart transplants. One of the few

discoveries which had an industrial application was the laser.

This look to the past only points up the fact that primary changes do not occur at a predictable rate. Another fact which is not so evident is that most primary changes are based in some degree on previous discoveries. A classic example is Sir Isaac Newton, who in a period of eighteen months, which has been hailed as the most productive in the history of creative thought, developed the basic laws of mechanics, worked out the fundamentals of gravitation, invented integral and differential calculus, and determined the nature of light and optics.

A century lapsed between the discovery of Newton's principles and Watts' steam engine. One of our key scientists was fond of showing that the time required between an initial discovery and the development and acceptance of a product was diminishing at an exponential rate. His chart showed that sometime in the 1980's we would be using a product before we had thought of it.

With all of our advanced systems of communication, the average citizen still has many misconceptions about technology. Thanks to science fiction, many items which have never reached the drawing board are thought to be in production. Conversely, these same people are unaware of many of our technical advances. We are today using experimental machines which will become commonplace in the next 25 years. A water jet cutting process has been invented which uses a stream of water 10 to 20,000 of an inch in diameter

and under 40,000 pounds of pressure per square inch to cut rubber, fabrics, and brittle material. Electron beam welding can, in one pass over a part, weld together pieces of metal 2 1/2 to 3 inches thick. One drawback here is that the material must be in a vacuum which severely limits the size which can be accommodated. This year parts of the Ford Torino, I am told, are being spot welded by laser beam, radiation carried by light rays. We can look forward to very high power lasers being used for tunneling, and cutting and forming materials. In medicine the laser makes possible bloodless surgical operations and can be used to fuse minute cracks in tooth enamel. The low-power laser is already in use as an alignment tool and will be the light source for the electronic checkout system which will be appearing in supermarkets. This system will read the Universal Production Code, a 10-digit optical bar printed on each article. At the checkout counter the clerk will pass the article over the scanner, and the scanner's laser will read the code from any angle, print a receipt showing price and name of the item purchased, as well as keeping track of inventory.

Computers, already a part of our everyday lives, will continue to grow in importance in the future. We are not far distant from complete computer aided design and manufacture. Designs will be made on cathode rays by a light pen and transmitted through the computer to tape and by tape to the machine which will cut and shape the article. Through the use of computers and other electronic equipment, robots will be programmed to handle hazardous and potentially dangerous jobs.

It is difficult to tell where the fast moving field of micro-electronics will lead us. The use of hand computers and calculators will certainly be accepted for student use as pencils and paper are today. One development which micro-miniaturization will help bring to popular use is the flat TV picture tube, a viewing screen which can be hung on the wall as a picture and plugged into an existing outlet. Our evening papers and magazines may well be delivered via TV, through subscriptions, by the year 2000.

We can expect accelerating progress in the use of satellites as navigation aids, for traffic control and for line of sight communications. The satellite's ability to provide us with a vantage point in space to see the earth in perspective will give us surveillance of water resources, weather, mineral resources, oceanographic temperatures and salinity, and even the health and conditions of the world's crops. With infra-red detection and measuring systems we can identify exactly what kinds of crops are growing, what conditions they are in, whether they need fertilizer or water and irrigation, or whether they are infected with some insect or crop disease. With the increasing problem of providing food to a hungry world this use of satellites takes on great importance. It is interesting to note that there are currently over 3000 identifiable man-made objects circling the earth, many in the category of space garbage.

Some commentators believe government will play an increasing role in matters of technology in the future. Technology assessment, a kind of early warning system, will become common terminology and will be used by federal and state governments to determine the direction technology should proceed, or whether a technology initiative will produce the desired results. Engineering projects such as urban redevelopment, urban transit and management of the water supply lie in the public domain, and are of such magnitude in terms of the resources required that government will be at the least a very active partner in the operation. Assuring our country of an adequate energy supply could well become a national goal in the next few years. One that would marshal the technical resources of this nation in much the same way as our space program did.

S. David Freemar in his book Energy - The New Era states that "the mix of GNP must change if we are to reach a stable level of energy consumption by 1985. The problems posed by an energy demand that grows by even 2% after 1985 are enormous."

In recent years Japan has achieved rapid economic growth, much of it at the expense of the environment and human values. Japanese Prime Minister Tanaka's book Building a New Japan, which is a best seller in Japan, talks about industry in the future:

> "... the industries to lead the economy in the future should be selected using the criteria of how little damage they do to the environment and how much pride and pleasure they give their workers - the center of gravity of the new

industrial structure should be changed from material and energy consuming heavy and chemical industries to knowledge intensive industries making greater use of man's wisdom and knowledge. . . "

I'm really glad we don't know what will happen tomorrow for it is the unknown which makes the future so exciting.

Another aspect of this forum is to discuss the implications these changes may have for Community Colleges and in particular for Community Services. My statistics show that in the Fall of the present academic year, the two-year colleges had almost 31% of the total students enrolled in higher education. With that enrollment you are capable of being a very strong influence on our society. I am not sure how you might best serve the future but the following comments come to my mind. 1.) Community Services by its very nature involves being flexible and being able to react quickly. I would hope you never lose this ability. 2.) With lowering retirement ages and lengthening of life span, many persons desire to enter upon a second career or learn new skills to fill their leisure time. Education for this segment of our population calls for new approaches to teaching, and Community Services seems eminently qualified to take on this task. 3.) As new job families are established and new skills required, what better place to start these classes than as pilot programs in Community Services? This could become the established route for transmitting real world information into the regular college curriculum.

The opportunity for all of our people to pursue some kind of post-secondary education, an opportunity that can be utilized all through life, is one we should not lose on our way to the 21st century.

AMERICAN ASSOCIATION OF COMMUNITY COLLEGES
April 15, 1975

Miner H. Baker
Vice President and Economist
Seattle-First National Bank

Let there be no question of misrepresentation. I do not pretend to unusual foresight about the future. I am a simple working economist. As such, I am obliged to make some forecasts. I consider next year a long-range forecast and 1980 a very long-range forecast. The year 2000 is clear out of sight, and I am distrustful of anyone who says it isn't. Presumably, the distance one has already traveled should bear some relationship to the distance he can see ahead. On that basis I would have some qualification. It is my observation, however, that your distant vision is also limited by the span of time about which you really give a damn. Having passed my 60th birthday, I just can't whomp up much interest in the year 2000.

With this lousy attitude, you may ask why I was asked to participate on this panel. The explanation is that I work cheap -- transportation only -- and my office is only six blocks away.

Throughout history, until the past few years, the ability to see into the future -- or pretend to -- has been limited to those who were either clairvoyant or uncommonly wise. In recent years, however, there has developed a cult of futurists who are endeavoring to establish a science or system such that if you follow the rules you don't have to be clairvoyant or wise. Since I am neither, I find it best to follow, more or less, the rules which they are setting down -- as best I understand them -- even though I fail to share their enthusiasm for the result. First, you rule out the catastrophic because it is unpredictable, in spite of the fact that history is filled with catastrophic events. Thus, my conclusions assume that there will be no World War III between now and the year 2000, although in fact this is an eventuality which has to be given a rating of at least one chance in three. I also assume that the oceans will not go dead because of pollution and that supersonic planes will not so damage the ozone layer that we all die from exposure to the

sun's rays. These are possibilities which I regard as very remote. I also do not see us, within this time frame, exhausting utterly any resource which is essential to civilization as we know it. So much for the catastrophic.

The next thing you do is open your mind. Forget the past and let your imagination run wild about the future. Discard no idea as too ridiculous. This is what the futurists seem to do best. At some institutions of higher education they conduct mind-blowing sessions for which you receive academic credit. Perhaps my mind is not relaxed enough to do this well, but I tried.

Where did I come out with this exercise? I tried to focus on human elements rather than scientific or technological gadgetry. First of all, what about humanity itself? There will be more of us but not nearly as many more as we recently thought. I see nothing to reverse the current low fertility rate, which means that by 2000 we will be within sight of zero population growth. Incidentally, I am confining my remarks to the United States, although I expect that the explosion of population in developing countries will also be greatly modified by 2000. We will be notably an older population in 2000. This is largely because today's population bulge of young people will have grown older and will not have been replaced by a new baby boom. It will also be because of further progress against the killers which shorten life. This impinges on the technological side, but I do expect that within 25 years there will be a cure for cancer, multiple sclerosis, and two or three other other diseases which shorten human life. And the progress in mental health will be even more dramatic -- knowledge of the chemistry of the body which may put many psychiatrists out of work.

What about the social structure in which this older, more stable populace will be living? Racial integration will still not be a fact, but discrimination will be looked back upon as an ugly historical phenomen not worthy of the 21st Century.

As with race, so with sex. Women's lib will be as dead as the suffrage movement because its goals will have been accomplished. I doubt a woman president within 25 years, but make that 50 years and I'll give you odds. This means more women in the labor force, of course, a continuation of a well-established trend. Under these circumstances, the woman who devotes her entire adult life to "homemaking" will become a rarity. I would have said that the institution of marriage will continue to lose ground but a number of young people in my office objected strenuously to this conclusion. I do think that the sexual freedom practiced by most of our young people will gain social acceptability, and that the average age at which they enter into marriage will rise significantly. As a result, it is very possible that the divorce rate will decline even though divorce will be easier to come by both legally and economically.

The change in family life will be both cause and effect of the development of a new type of domestic service, notably the professional cleaner-decorator who will come in with efficient and expensive mechanical devices to relieve the houseperson of time-consuming chores. The two-income family will be able to afford this service as women increasingly earn equal pay for equal work. I suppose that day care is bound to be a thriving area also, although I am hard pressed to conceive how the efficiencies will be developed in this case to keep the cost within reason. With more women working, and particularly with more jobs open to women, the most substantial wage increases are going to come in jobs which customarily have been reserved for women. Thus, when there is more choice available, the secretary is going to get more money to hold her where she is needed, and we will in fact find some men attracted to secretarial work as well. In every area of service there is going to be pressure to minimize requirements for labor in order to hold down costs. I see this impinging on education, particularly at the K-12 level, with the use of teaching devices and electronic aids. Like medicine, this is an area in which costs are going to be controlled by adaptation of the sorts of techniques which have increased productivity in industry.

I would like to say that I see the work ethic making a comeback in the next 25 years, but I do not. We are well on the way to a guaranteed annual income for everybody, which is a fine objective in and of itself, but it does encourage the marginal worker simply to drop out. In 25 years I think we'll accept this as a fact of life. There is a lot of talk about increased leisure time -- and in fact it is one of the subjects suggested for this discussion -- but I do not see it as a dominant factor. In the past 25 years we have reduced the working week by only three hours. I doubt that we will do as well in the next 25. Why? Because increases in productivity will be limited, and because most people would rather have more income than more leisure. The four-day week and the thirty-hour week are, in my opinion, not in sight. There will, in fact, be more people working part-time -- mostly women who want to have the best of two worlds -- but I am referring to the standard work week. There will also be more total hours of leisure available, but most of them will be in the hands of the retired. Even here I look for a notable movement in the direction of second careers. This, I think, will be one of the challenges to community colleges -- to meet the needs of senior and not-so-senior citizens who want to pursue new academic or vocational interests.

A couple of notes, in passing, about physical environment. The single-family home is going to become much less dominant within this time frame. This is a matter partly of cost but mostly of life-style. The family with two working parents is going to be less and less enchanted with the responsibility of a typical suburban home. I like to think, but I may be wrong, that the flight from the central city will reverse itself. I am quite certain, regardless, that sometime before the year 2000 there will be a substantial change in the form and character of local government. State governments, too, will experience a good deal of constitutional revision, if only to deal with the problems of the cities. Our cities are rotting, yet they are vital and they can only be restructured on a metropolitan basis. Whether the dispersion from the city will in fact be turned around depends in part upon the technological race between transportation and communication. Much of our

attention has been focused on the former, first in the construction of freeways and then in the planning of rapid transit which in most metropolitan areas is as far away as it was ten years ago. It just may be, however, that communication breakthroughs will make rapid transit less essential. I make reference particularly to closed circuit television which will permit face-to-face contact at a distance and the computer terminals and scanners which will bring an unlimited variety of reference material to remote locations. In other words, if the world comes to us, we may not need to go to the world -- although I suspect that transportation will still retain a rather high priority.

Transportation and communication both require energy, of course, which could be the bottleneck preventing either one from developing substantially. I think not. In my view the energy problem is a problem of the next ten years. Beyond that we will tap new sources which are clean and inexhaustible. This is one of the merits of a 25-year projection; it can leap over obstacles which cannot be ignored in a ten-year span. Fifty years is even better. I don't know when the energy breakthrough will come, but I think it is reasonable to position it well within the next 25 years. I don't know, also, when the tide of pollution will be turned but I think it should be rather soon. Our initial standards are going to be relaxed somewhat in the short-term, but by the year 2000 we will take it for granted that air and water quality must be sustained, and the cost of doing so will be a cost of doing business.

The reference to cost brings us finally to the subject of economics -- a field in which I am presumed to have some expertise, but in which I find the questions most perplexing. I expect that during the next 25 years -- and beyond, for that matter -- it will be impossible to sustain the sort of increase in man-hour productivity which we have enjoyed in the past. This is partly because of shortage of capital to provide the tools which sustain the rise in productivity, partly because an

increasing share of the labor force is in the service areas where increased production is hard to come by. Accordingly the rise in production per worker will slow. It is just possible, however, because of the increased participation in the labor force by women, that production per capita will still rise at close to the historic rate. At some point it will have to slacken but perhaps not by 2000.

This slower growth scenario may not seem to reconcile with the explosion of knowledge which we are told is taking place around us. Perhaps it doesn't. It is difficult, however, to see any completely new industry which will rev up the economy as did the automobile in the Twenties, or any massive event like World War II which accelerated the pace of innovation in virtually all fields. Perhaps new energy developments will play this role; I have already suggested as much. And communications. And I suppose that the revolution in materials -- both plastic and metals -- will continue. I come back to the labor force, however, and it seems to me that most of the things which can be done by machine are being done by machine; and we are left with a considerable residue of things which have to be done by people, where the opportunities for increasing output are more limited. I also have those nagging doubts about the availability of enough capital to install all of the labor-saving devices we are capable of creating.

During this next 25 years, the disappearance of the family farm will become almost complete. American agriculture, already a marvel of efficiency, will continue to be the one industry in which we have a clear advantage over the rest of the world. For those of you from this part of the country, our forestry is going to become more like agriculture, in terms of cultivation and fertilization, and consequently much more productive. The role of government in the economy is going to continue to grow. I do not, like some others, see a line beyond which we cannot go without destroying our free economic system, but the size of government is a factor in a lower growth projection for the economy. We will in part be trading off growth for stability,

because I do see only moderate ups and downs of the business cycle. The further growth of government will be largely in closing the remaining gaps in economic security -- as in medical care -- and probably in extending free public education beyond high school to encompass whatever advanced education the individual can absorb. I suppose that thought really merits some elaboration before this audience. I am aware that public opinion polls show a substantial majority of citizens favor higher tuition at state colleges rather than higher taxes to support them. I think this view will change as a larger proportion have children who aspire to higher education. This leaves the problem of the private school, which suggests that the aid will be given to the student rather than the college. Perhaps this will be accomplished through the Education Act of 1987.

If there were any doubt about the continued growth of government because of health and education, remember that it will also have a continuing commitment to full employment. This is going to be interpreted as permitting unemployment at a level substantially above the 4 percent originally targeted, but this still leaves the expense of supporting those unemployed. I expect that we are going to develop much more sophisticated techniques for matching job openings and job applicants, but in view of the virtual impossibility of predicting industry trends with accuracy, I am not too sanguine about the prospect of planning ahead for occupational requirements.

Everything I have said so far points to a continued inflationary thrust in the economy at a level well above the historic average if not at the unprecedented peak of the past year or two. My guess is an average inflation rate of 4 percent a year. This means that a $12,000 income in 1975 translates to an equivalent of $32,000 in 2000. Add to this a modest increase of 1.5 percent annually in real purchasing power and you get to a ridiculous figure of $46,000 for your $12,000 job in 1975. This suggests two things, neither of any great social significance. One is that our

progressive income tax will be modified by an escalator clause so that the $12,000 worker will not, as his nominal income rises, find himself moving into a 40 percent tax bracket. The other is that the use of the penny as a medium of exchange will become obsolete. As a matter of fact, there will be much less use of currency of any kind in the year 2000 and almost no use of checks. Bankers have been talking about the checkless society for at least ten years. It is still some distance off but the technology is available to support it. This means, if you please, a credit card society, or a similar card which will be inserted in a terminal at the point of sale and immediately communicate the transaction to a central computer. This, incidentally, may render much petty crime impractical, although it opens the prospect for the sophisticated thief who will operate by jamming or misleading the computer.

I have deliberately avoided consideration of the international scene because it introduces so many more variables, yet clearly this may be the key to what happens here at home. Certainly a number if not all of the third world nations are going to make great strides in the next 25 years, and whether they can do so without pulling us down remains to be seen. The dollar will lose its dominance as the world's standard of exchange, probably replaced by an international unit such as paper gold. Nuclear proliferation is a certainty, and one only hopes that it will be used as responsibly by the lesser powers as it has thus far been used by the great powers. I like to think that the resources of the world, if not infinite, are so far from being fully exploited that the march of technology will more than match their rate of disappearance. This is perhaps the most exciting period in the history of man, because this is the first time ever that we have approached the physical capability of providing a comfortable existence for every human being -- without poverty, without hunger, without slavery.

I started out by saying that no one -- not even me -- can see 25 years ahead. I stand on that. At the same time, let us not forget what a very short period of time that is in the span of history. The year 2000 is no further away from us than the year 1950, and that was just yesterday. It follows that in the year 2000 more things will be like they are today than different. The world will not be transformed -- unless it destroys itself. These next 25 years are not going to bring the millenium but I do think they will determine whether mankind blows its chance to reach the age-old dream of peace, comfort, and security.

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